Appendix C
Preliminary CHART Assessment for the California Central Coast *O. mykiss* ESU

ESU Description

The CCC *O. mykiss* ESU was listed as a threatened species in 1997 (62 FR 433937; August 18, 1997). The ESU includes all naturally spawned populations of *O. mykiss* in coastal river basins from the Russian River southward to and including Aptos Creek, as well as naturally spawned populations of *O. mykiss* in streams that drain into San Francisco and San Pablo Bay eastward to but excluding the Sacramento-San Joaquin Delta. Major coastal watersheds occupied by naturally spawning fish in this ESU include the Russian River, Lagunitas Creek, and San Lorenzo River. Important watershed occupied by naturally spawning fish within the San Francisco Bay/San Pablo Bay area include Alameda Creek, Coyote Creek, Guadelupe Creek, Petaluma River, and the Napa River. Based on an updated status review (NMFS 2003a) and an assessment of hatchery populations located within the range of the ESU (NMFS 2003b), NMFS recently proposed that the ESU remain listed as a threatened species (69 FR 33102; June 14, 2004). In addition, NMFS proposed that resident *O. mykiss* occurring with anadromous populations below impassable barriers (both natural and man made), two artificially propagated populations (Don Clausen Fish Hatchery in the Russian River basin and the Kingfisher Flat Hatchery/Scott Creek hatchery in Scott Creek south of San Francisco) and three resident *O. mykiss* sub population above Dam 1 on Alameda Creek also be included in this ESU. For the purposes of this re-designation effort, therefore, the watershed units occupied by resident *O. mykiss* in upper Alameda Creek were considered occupied. A Technical Recovery Team has been formed and is in the process of identifying the historical and extant independent population structure of this ESU as well as the associated viability criteria for these populations.

CHART Area Assessments

The CHART assessment for the CCC *O. mykiss* ESU addressed 47 occupied CALWATER Hydrologic Subareas (HSAs) organized into10 CALWATER Hydrologic Units (HUs) (Figures C1 and C2). The HSAs were chosen as freshwater critical habitat units because they present a convenient and systematic way to organize the CHART's watershed assessments for this ESU. Also included in this assessment were five HSAs that encompass San Francisco-San Pablo-Suisun Bay complex which constitutes

migratory and rearing habitat for several Bay area tributary stream populations. Information presented below for individual HUs (area, counties, total stream miles, occupied stream miles, and habitat use) were generated from GIS data sets compiled by NMFS Southwest Region (NMFS 2004a).

Unit 1. Russian River Subbasin (HU 1114)

The Russian River HU is located in the northern portion of the ESU an includes the Russian River drainage. The HU encompasses approximately 1,483 square miles and occurs primarily in Mendocino and Sonoma Counties. The HU contains 11 HSAs, 10 of which are occupied, and 1,831 stream miles (at 1:100,000 hydrography). The unoccupied HSA does not contain fish because it located above Coyote Dam which is an impassable fish barrier used to facilitate water diversions from the Eel River and delivery downstream for agricultural and municipal purposes. Fish distribution and habitat use data compiled by NMFS biologists identify approximately 713 miles of occupied riverine and/or estuarine habitat in the 10 occupied HSAs (NMFS 2004a). The CHART concluded that these occupied HSAs contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified several management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine/estuarine reaches for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C1 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 2. Bodega Bay Subbasin (HU 1115)

The Bodega Bay HU is located in the north central portion of the ESU and includes several small streams including Bodega Harbor. The HU encompasses approximately 147 mi^2 and occurs in Sonoma and Marin Counties. This HU contains 4 HSAs, 2 of which are occupied, and 157 stream miles (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 18 miles of occupied riverine/estuarine habitat in the occupied HSAs (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C2

depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 3. Marin Coastal Subbasin (HU 2201)

The Marin Coastal HU is located in the central coastal portion of the ESU and includes several small watersheds including Lagunitas Creek. The HU encompasses approximately 327 mi^2 and occurs primarily in Marin County. This HU contains 5 HSAs, 4 of which are occupied, and a total of 347 miles of streams (at 1:100,000 hydrography). The unoccupied HSA lacks satisfactory habitat and is of high gradient. Fish distribution and habitat use data compiled by NMFS biologists identify approximately 74 miles of occupied riverine/estuarine habitat in the 4 occupied HSAs (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C3 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 4. San Mateo Subbasin (HU 2202)

The San Mateo HU is located on the coast immediately south of the Golden Gate and includes several small creeks including San Gregorio and Pescadero Creeks. The HU encompasses approximately 257 mi^2 and occurs primarily in San Mateo County with small portions in San Francisco, Santa Cruz, and Santa Clara Counties. This HU contains 6 HSAs, 5 of which are occupied, and a total of 319 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 146 miles of occupied riverine/estuarine habitat in the occupied HSA (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine habitat for the HSA that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C4 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat

designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 5. Bay Bridges Subbasin (HU 2203)

The Bay Bridges HU is located in the central portion of the ESU and includes portions of northern San Francisco Bay, San Pablo Bay, and some associated watersheds. The HU encompasses approximately 191 mi^2 and occurs in portions of several counties including: Alameda, Contra Costa, Marin, and San Francisco. This HU contains 4 HSAs, 3 of which are occupied, and 85 miles of streams (at 1:100,000 hydrography). The San Francisco Bayside HSA is unoccupied due to intense urbanization and lack of stream habitat Fish distribution and habitat use data compiled by NMFS biologists identify approximately 46 miles of occupied riverine/estuarine habitat in the 3 occupied HSAs (NMFS 2004a). One of the occupied HSAs (220312; Bay Waters) includes that portion of San Francisco Bay bounded by the Bay Bridge, the Golden Gate Bridge, and the Richmond Bridge, and it encompasses an area of approximately 83 mi^2 (Figure C3). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C5 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 6. South Bay Subbasin (HU 2204)

The South Bay HU is located in the southern portion of the ESU and includes South San Francisco and associated tributaries such as Alamada Creek. This HU encompasses approximately 1,220 mi^2 and occurs in portions of several Counties including: Alameda, Contra Costa, San Francisco, San Joaquin, San Mateo, Santa Clara, and Stanislaus. This HU contains 4 HSAs, all of which are occupied, and 1,279 miles of streams (at 1:100,000 hydrography). One of the 4 HSAs (Upper Alameda Creek; HSA# 220430) is not accessible to anadromous fish, but is nonetheless considered occupied for the purposes of this critical habitat analysis because genetic evidence indicates the resident *O. mykiss* are closely related to local anadromous *O. mykiss* (Nielsen 2003 as cited in NMFS 2003a) and NMFS has proposed to include these resident populations in the listed ESU (69 FR

33102; June 14, 2004). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 172 miles of occupied riverine/estuarine habitat in the 4 occupied HSAs (NMFS 2004a), including the Upper Alameda Creek HSA (220430). One of the occupied HSAs (220410; Bay Channel) includes that portion of San Francisco Bay south of the Bay Bridge to the Dumbarton Bridge, and it encompasses an area of approximately 173 mi^2 (Figure C3). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and/or estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C6 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 7. Santa Clara Subbasin (HU 2205)

The Santa Clara HU is located in the southern portion of the ESU and includes part of South San Francisco Bay and associated tributaries including Coyote Creek and the Guadalupe River. This HU encompasses approximately 840 mi^2 and occurs primarily in Santa Clara County and smaller portions of Alameda, San Mateo, Santa Cruz, and Stanislaus Counties. The HU contains 5 HSAs, 4 of which are occupied, and 975 miles of streams (at 1:100,000 hydrography). The remaining HSA is unoccupied due to lack of stream habitat and intense urbanization. Fish distribution and habitat use data compiled by NMFS biologists identify approximately 135 miles of occupied riverine/estuarine habitat in the 4 HSAs (NMFS 2004a). One of the occupied HSAs (220510; Dumbarton South) includes that portion of San Francisco Bay south of the Dumbarton Bridge which encompasses an area of approximately 15 mi^2 (Figure C3). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C7 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 8. San Pablo Subbasin (HU 2206)

The San Pablo HU is located in the central portion of the ESU and includes part of San Pablo Bay as well as several associated tributaries including the Petaluma River, Sonoma Creek, and the Napa River. This HU encompasses approximately 1,018 mi^2 and occurs in several Counties including: Alameda, Contra Costa, Marin, Napa, Sonoma, and Solana. The HU contains 6 HSAs, all of which are occupied, and 974 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 392 miles of occupied riverine/estuarine habitat in the 6 HSAs (NMFS 2004a). One of the occupied HSAs (220610; San Pablo Bay) includes San Pablo Bay from the Richmond Bridge to the Carquinez Bridge, and area that encompasses approximately 115 mi^2 (Figure C3). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C8 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 9. Suisun Bay Subbasin (HU 2207)

The Suisun Bay HU is located in the easternmost portion of the ESU and includes Suisun Bay and associated tributaries including Mount Diablo Creek and Suisun Creek. This HU encompasses approximately 653 mi^2 and occurs primarily in Solano and Contra Costa Counties. The HU contains 8 HSAs, 5 of which are occupied, and 794 miles of streams (at 1:100,000 hydrography). The remaining three HSAs are unoccupied due to unsuitable habitat and/or barriers and urbanization. Fish distribution and habitat use data compiled by NMFS biologists identify approximately 86 miles of occupied riverine/estuarine habitat in the 5 HSAs (NMFS 2004a). One of the occupied HSAs (220710; Suisun Bay) includes Suisun Bay which encompasses an area of approximately 56 mi^2 (Figure C3). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C9 depicts the specific areas in

this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

Unit 10. Big Basin Subbasin (HU 3304)

The Big Basin HU is located in the southernmost coastal portion of the ESU south of The Golden Gate and includes several small coastal streams such as Gazos Creek, Waddell Creek, Scott Creek, the San Lorenzo River, Soquel Creek and Aptos Creek.This HU encompasses approximately 367 mi^2 and occurs primarily in Santa Cruz and Santa Clara Counties. The HU contains 4 HSAs, all of which are occupied, and 509 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 220 miles of occupied riverine/estuarine habitat in the 4 HSAs (NMFS 2004a). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table C1 summarizes the total miles of occupied riverine and estuarine reaches identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map C10 depicts the specific areas in this HU that are occupied by the ESU and under consideration for the critical habitat designation. The CHART did not identify any unoccupied areas in this subbasin that may be essential for the conservation of the ESU.

CHART Preliminary Conservation Value Rating

Freshwater/Estuarine Areas

After reviewing the best available scientific data regarding critical habitat for this ESU, the CHART concluded that most of the occupied HSAs were of high or medium conservation value to the ESU. Of the 47 occupied HSAs that were evaluated (including Upper Alameda Creek; HSA #220430), 20 were rated as having high conservation value, 13 were rated as having medium conservation value, and 14 were rated as having low conservation value. Table C2 summaries the CHARTs PCE/watershed scores and preliminary conservation value ratings (i.e. low, medium or high) for each occupied HSA. Map C11 shows the overall spatial distribution of conservation scores for occupied HSAs within the ESU.

Marine Areas

NMFS determined that marine areas did not warrant consideration as critical habitat for

this ESU.

References and Sources of Information

NMFS 2003a. Updated Status of Federally Listed ESUs of West Coast Salmon and Steelhead. West Coast Salmon Biological Review Team; Northwest Fisheries Science Center and Southwest Fisheries Science Center. July 2003.

NMFS 2003b. Hatchery Broodstock Summaries and Assessments for Chum, Coho, and Chinook Salmon and Steelhead Stocks within ESUs listed under the ESA. Salmon and Steelhead Hatchery Assessment Group/NOAA Fisheries; Northwest Fisheries Science Center and Southwest Fisheries Science Center

NMFS. 2004a. GIS and Associated Data Related to Critical Habitat Designations for Seven ESUs of Salmon and *O. mykiss* in California. Compiled by NMFS, Southwest Region.

Federal Register Notices

62 FR 433937 - Central California Coast Steelhead listing determination

69 FR 33102 - Proposed Listing Determinations for 27 West Coast Salmon and Steelhead ESUs

Table C1. Summary of Occupied Watersheds, PCEs and Management Activities for the Central California Coast O. mykiss ESU

Basin	Watershed	Calwater - Unit	Spawning/Rearing PCEs (mi)**	Rearing/Migration PCEs (mi)**	Presence/Migration Only PCEs (mi)**	Management Activities***
Russian River	Guerneville	111411	115	115	115	UR, AG, FC, NH
Russian River	Austin Creek	111412	50	50	49	UR, GR, NW
Russian River	Laguna De Santa Rosa	111421	24	29	29	FC, UR, AG
Russian River	Santa Rosa Creek	111422	29	29	27	UR, FC, CM, RB
Russian River	Mark West Springs	111423	38	38	38	UR, AG, WI
Russian River	Warm Springs	111424	66	66	63	AG, UR, NH
Russian River	Geyserville	111425	120	125	125	AG, GM, WI
Russian River	Big Sulphur Creek	111426	45	45	45	GR, RB, WI
Russian River	Ukiah	111431	140	142	140	UR, AG, NH
Russian River	Forsythe Creek	111433	43	43	43	GR, RB, WI
Bodega Bay	Salmon Creek	111510	13	13	10	GR, UR, WI
Bodega Bay	Bodega Harbor	111520				
Bodega Bay	Estero Americano	111530	4	4	4	AG, GR, WI
Bodega Bay	Estero De San Antonio	111540				AG, GR, CM, WI, WG
Marin Coastal	Walker Creek	220112	17	17	17	GR, UR, WI
Marin Coastal	Lagunitas Creek	220113	35	35	35	UR, NH, NW, WI
Marin Coastal	Inverness	220114				
Marin Coastal	Point Reyes	220120	4	6	5	GR
Marin Coastal	Bolinas	220130	12	12	12	UR, FR, FC
San Mateo	San Francisco Coastal	220210				
San Mateo	San Mateo Coastal	220221	8	8	8	NH, UR, WI
San Mateo	Half Moon Bay	220222	19	22	22	WI, AG, NH
San Mateo	Tunitas Creek	220223	13	13	12	WI, NW
San Mateo	San Gregorio Creek	220230	37	37	36	RB, NW
San Mateo	Pescadero Creek	220240	44	52	47	RB, WI, NW, CM
Bay Bridges	Bay Waters	220312		20	20	TR, WL, UR, RB
Bay Bridges	San Rafael	220320	17	21	21	UR, CM, FC
Bay Bridges	Berkeley	220330	2	2	2	UR, CM, FC
Bay Bridges	San Francisco Bayside	220340				
South Bay	Bay Channel	220410		26	26	UR, TR, RB
South Bay	Eastbay Cities	220420	28	33	33	UR, FC, NH
South Bay	Upper Alameda Creek	220430	87	99	99	NH, NW, UR, GR
South Bay	San Mateo Bayside	220440		1	1	UR, NH, CM
Santa Clara	Dumbarton South	220510		9	9	RB, UR, WL
Santa Clara	Freemont Bayside	220520		1	1	UR, FC, NH
Santa Clara	Coyote Creek	220530	37	44	44	UR, NH

Basin	Watershed	Calwater Unit	Spawning/Rearing PCEs (mi)**	Rearing/Migration PCEs (mi)**	Presence/Migration Only PCEs (mi)**	Management Activities***
Santa Clara	Guadalupe River-San Jose	220540	37	37	37	UR, FC, NH
Santa Clara	Palo Alto	220550	43	45	45	UR, NH, NW
San Pablo	San Pablo Bay	220610		14	14	RB, UR, WL
San Pablo	Novato Creek	220620	11	17	17	UR, CM
San Pablo	Petaulma River	220630	15	39	39	TR, UR, FC, CM, AG
San Pablo	Sonoma Creek	220640	83	87	87	NH, RB, NW, CM, AG
San Pablo	Napa River	220650	145	177	177	NH, WI, UR, CM, AG
San Pablo	Pinole	220660	5	22	22	UR, CM, NH
Suisun	Suisun Bay	220710		17	17	RB, TR, UR, WL
Suisun	Benicia	220721	11	18	18	NH, WI, RB
Suisun	Suisun Creek	220722	14	15	15	NH, NW, UR
Suisun	Suisun Slough	220723				
Suisun	Grizzly Island	220724				
Suisun	Pittsburg	220731	12	15	15	UR, RB
Suisun	Walnut Creek	220732				
Suisun	Martinez	220733	1	8	8	FC, UR, NH
Big Basin	Davenport	330411	43	43	41	RB, WI, FR
Big Basin	San Lorenzo	330412	92	103	97	NW, RB, FR
Big Basin	Aptos-Soquel	330413	40	41	41	NW, RB, FR
Big Basin	Ano Nuevo	330420	14	14	14	WI, NH

*Total Stream Miles calculated from blueline streams represented on 1:100,000 USGS Topographic Maps

**Overlap of stream miles may occur betweeen the three habitat types.

***Management Activities Codes:

AG - Agriculture
CM - Channel Modification
ES - Exotic / Invasive Species
FC - Flood Control Channel
FR - Forestry
GM - Sand and Gravel Mining
GR - Grazing
HD - Hydroelectric Dam
NH - Non-hydro Dam
NW - Non-agriculture Withdrawls / Impoundments
PO - Poaching
RB - Road Building / Maintenance
SP Septic System Failure / Containation
TR - River, Estuary, Ocean Traffic
UR - Urbanization
WI - Agriculture Withdrawls / Impoundments
WL - Wetland Loss / Removal

Table C2. Preliminary Scores/Overall Rankings of Conservation Values for Calwater Units Occupied by the Central California Coast Steelhead

Basin	Watershed	Calwater Unit	Total Score (0-18)	Comments / Other Considerations	Preliminary Conservation Value
Russian River	Guerneville	111411	15		High
Russian River	Austin Creek	111412	14		High
Russian River	Laguna De Santa Rosa	111421	8		Low
Russian River	Santa Rosa Creek	111422	12		Medium
Russian River	Mark West Springs	111423	12		High
Russian River	Warm Springs	111424	13		High
Russian River	Geyserville	111425	14		High
Russian River	Big Sulphur Creek	111426	14		High
Russian River	Ukiah	111431	12		Medium
Russian River	Forsythe Creek	111433	13		High
Bodega Bay	Salmon Creek	111510	10		Medium
Bodega Bay	Bodega Harbor	111520	0		NA
Bodega Bay	Estero Americano	111530	9		Low
Bodega Bay	Estero De San Antonio	111540	0		NA
Marin Coastal	Walker Creek	220112	10		Medium
Marin Coastal	Lagunitas Creek	220113	14		High
Marin Coastal	Inverness	220114	0		NA
Marin Coastal	Point Reyes	220120	5		Low
Marin Coastal	Bolinas	220130	6		Low
San Mateo	San Francisco Coastal	220210	0		NA
San Mateo	San Mateo Coastal	220221	8		Low
San Mateo	Half Moon Bay	220222	11		Medium
San Mateo	Tunitas Creek	220223	10		Medium
San Mateo	San Gregorio Creek	220230	14		High
San Mateo	Pescadero Creek	220240	14		High
Bay Bridges	Bay Waters	220312	0		High
Bay Bridges	San Rafael	220320	11		Medium
Bay Bridges	Berkeley	220330	5		Low
Bay Bridges	San Francisco Bayside	220340	0		NA
South Bay	Bay Channel	220410	0		High
South Bay	Eastbay Cities	220420	10		Medium
South Bay	Upper Alameda Creek	220430	14		High
South Bay	San Mateo Bayside	220440	1		Low
Santa Clara	Dumbarton South	220510	0		High
Santa Clara	Freemont Bayside	220520	0		Low
Santa Clara	Coyote Creek	220530	12		Medium
Santa Clara	Guadalupe River-San Jose	220540	7		Low
Santa Clara	Palo Alto	220550	10		Medium

San Pablo	San Pablo Bay	220610	0		High
San Pablo	Novato Creek	220620	8		Low
San Pablo	Petaulma River	220630	11		Medium
San Pablo	Sonoma Creek	220640	14		High
San Pablo	Napa River	220650	13		High
San Pablo	Pinole	220660	6		Low
Suisun	Suisun Bay	220710	0		Low
Suisun	Benicia	220721	2		Low
Suisun	Suisun Creek	220722	10		Medium
Suisun	Suisun Slough	220723	0		NA
Suisun	Grizzly Island	220724	0		NA
Suisun	Pittsburg	220731	9		Low
Suisun	Walnut Creek	220732	0		NA
Suisun	Martinez	220733	5		Low
Big Basin	Davenport	330411	14		High
Big Basin	San Lorenzo	330412	14		High
Big Basin	Aptos-Soquel	330413	13		High
Big Basin	Ano Nuevo	330420	10		Medium

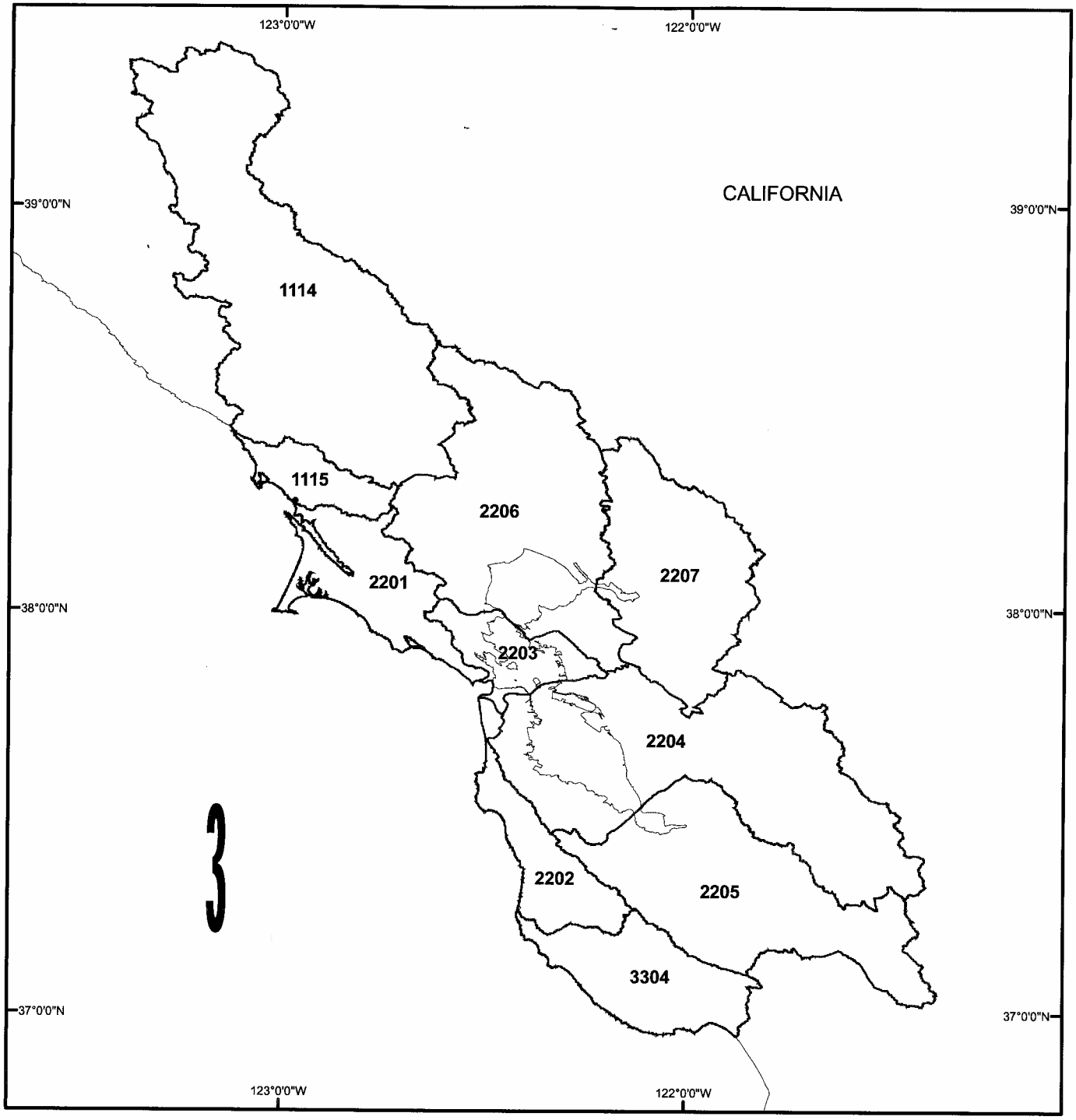
Figures C1 through C3: CALWATER Hydrologic Units, and Hydrologic subareas within the Range of the Central California Coast *O. mykiss* ESU

C1 - CALWATER Hydrologic Units

C2 - CALWATER Hydrologic Subareas

C3 - San Francisco/San Pablo Bay HSAs

Map of the Central California Coast O. mykiss ESU

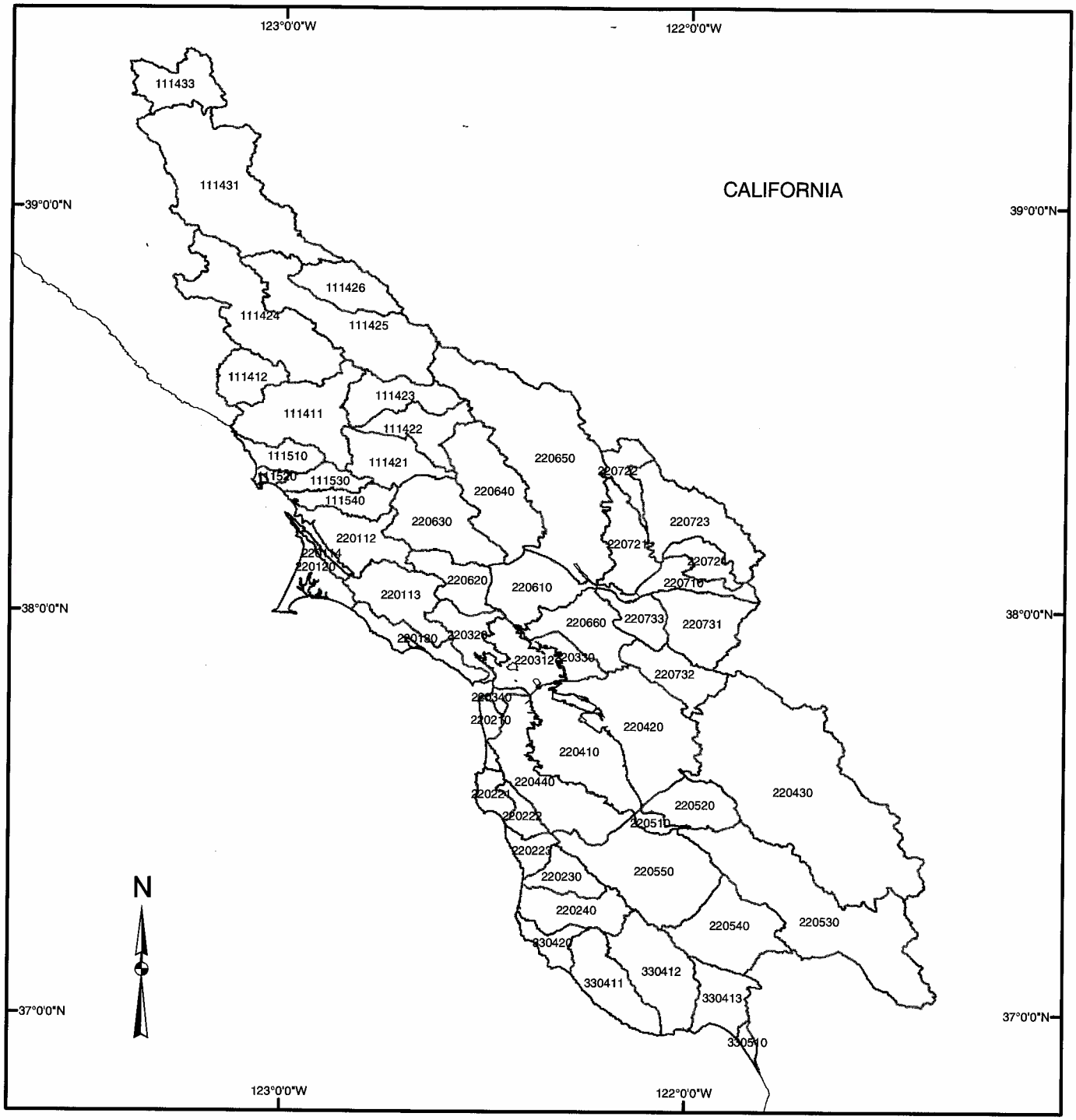


Hydrologic Unit Boundary

State Boundaries

Area of Detail

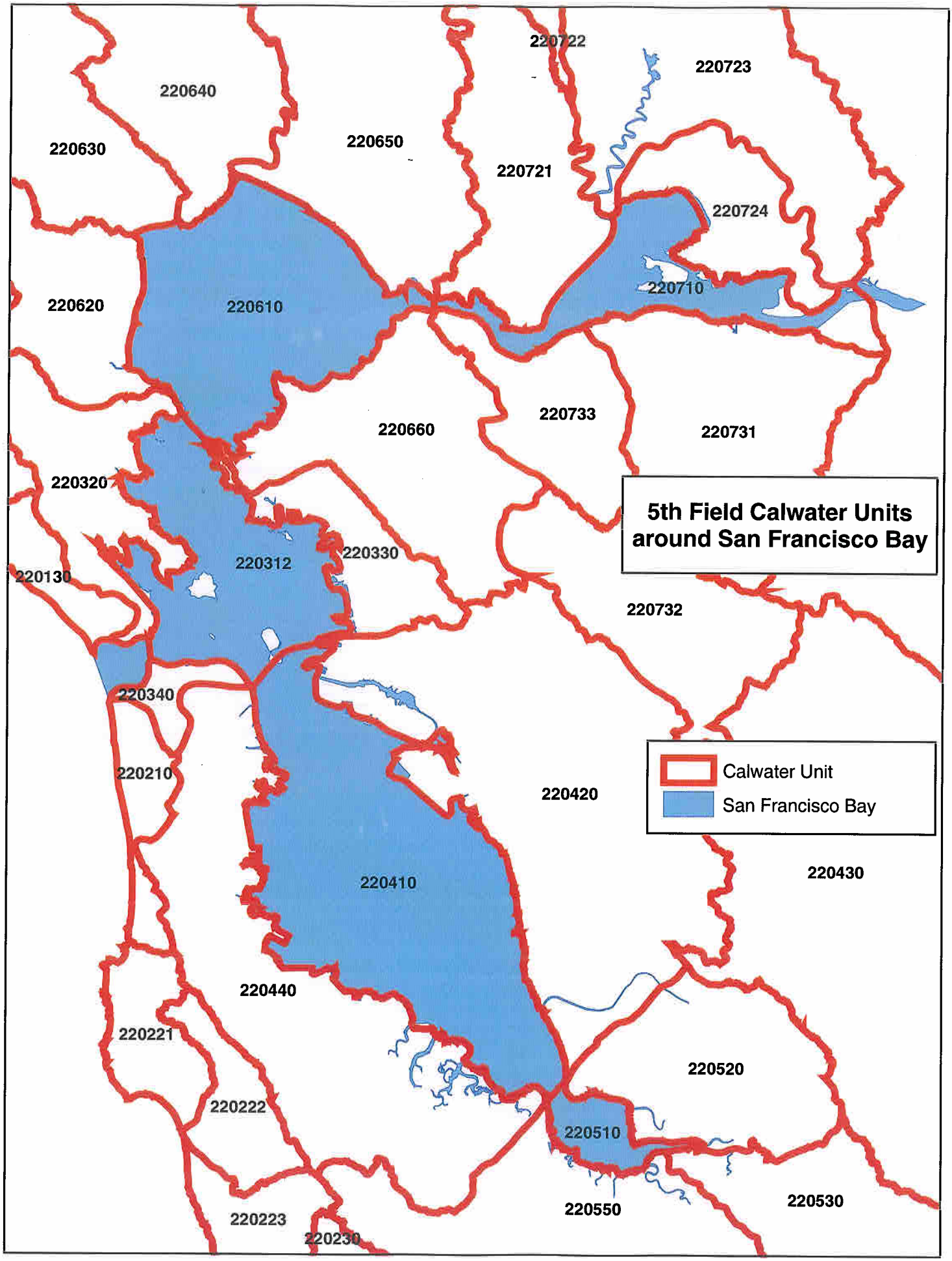
Map of the Central California Coast O. Mykiss ESU



Subbasin Boundaries

State Boundaries

Area of Detail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5th Field Calwater Units around San Francisco Bay
Calwater Unit
San Francisco Bay

Maps C1 through C10: Central California Coast *O. mykiss* ESU - Areas (Units) Under Consideration for Critical Habitat Designation

C1 - Unit 1114 (Russian River HU)

C2 - Unit 1115 (Bodega HU)

C3 - Unit 2201 (Marin Coastal HU)

C4 - Unit 2202 (San Mateo HU)

C5 - Unit 2203 (Bay Bridges HU)

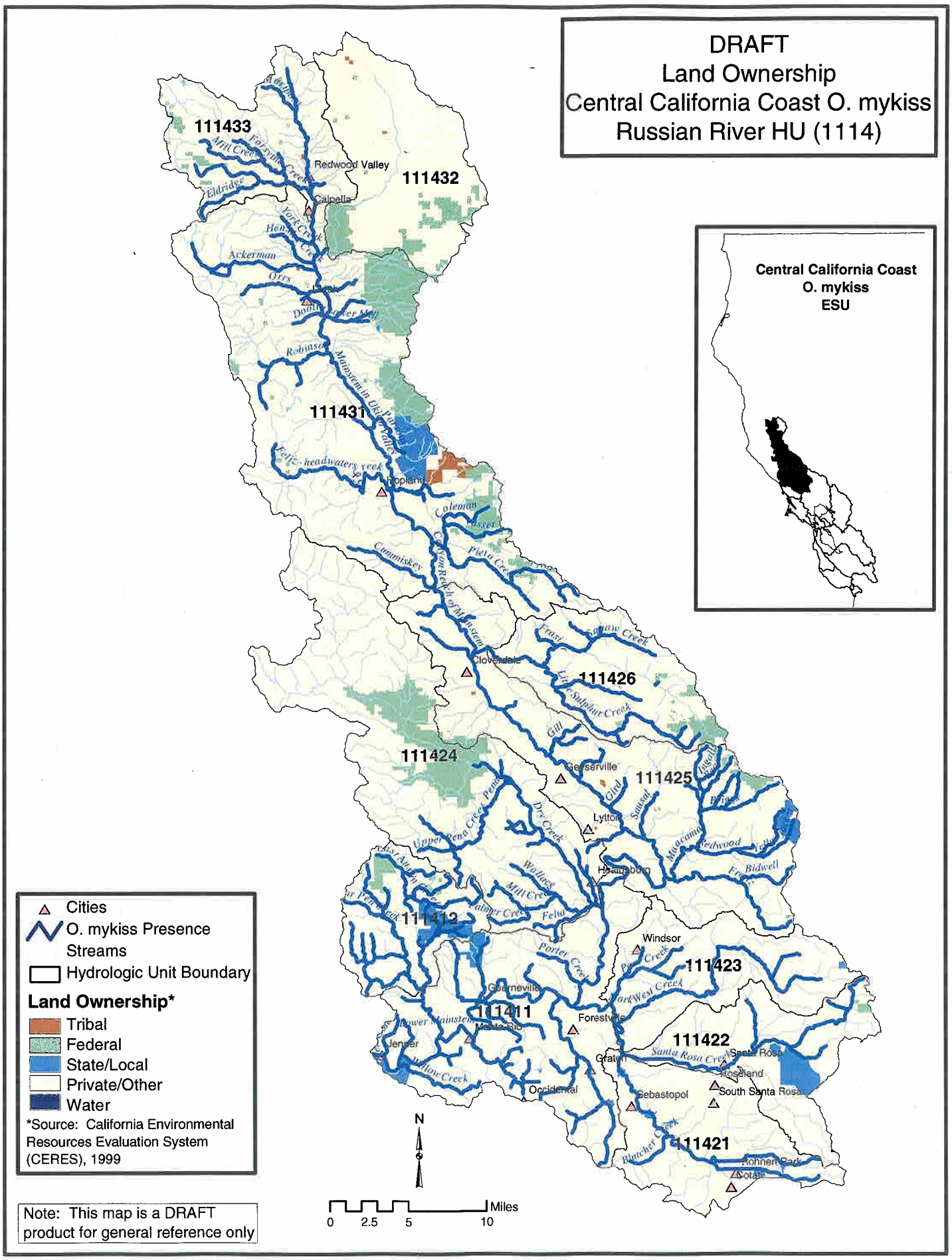
C6 - Unit 2204 (South Bay HU)

C7 - Unit 2205 (Santa Clara HU)

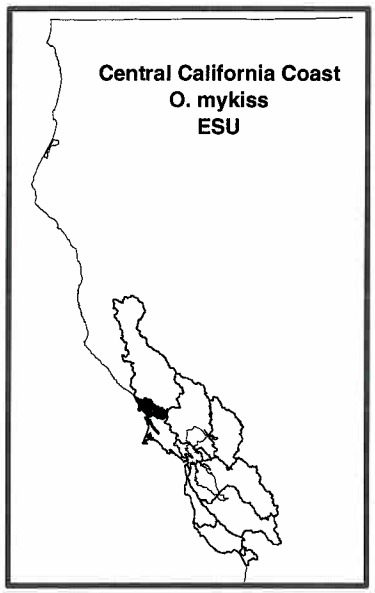
C8 - Unit 2206 (San Pablo HU)

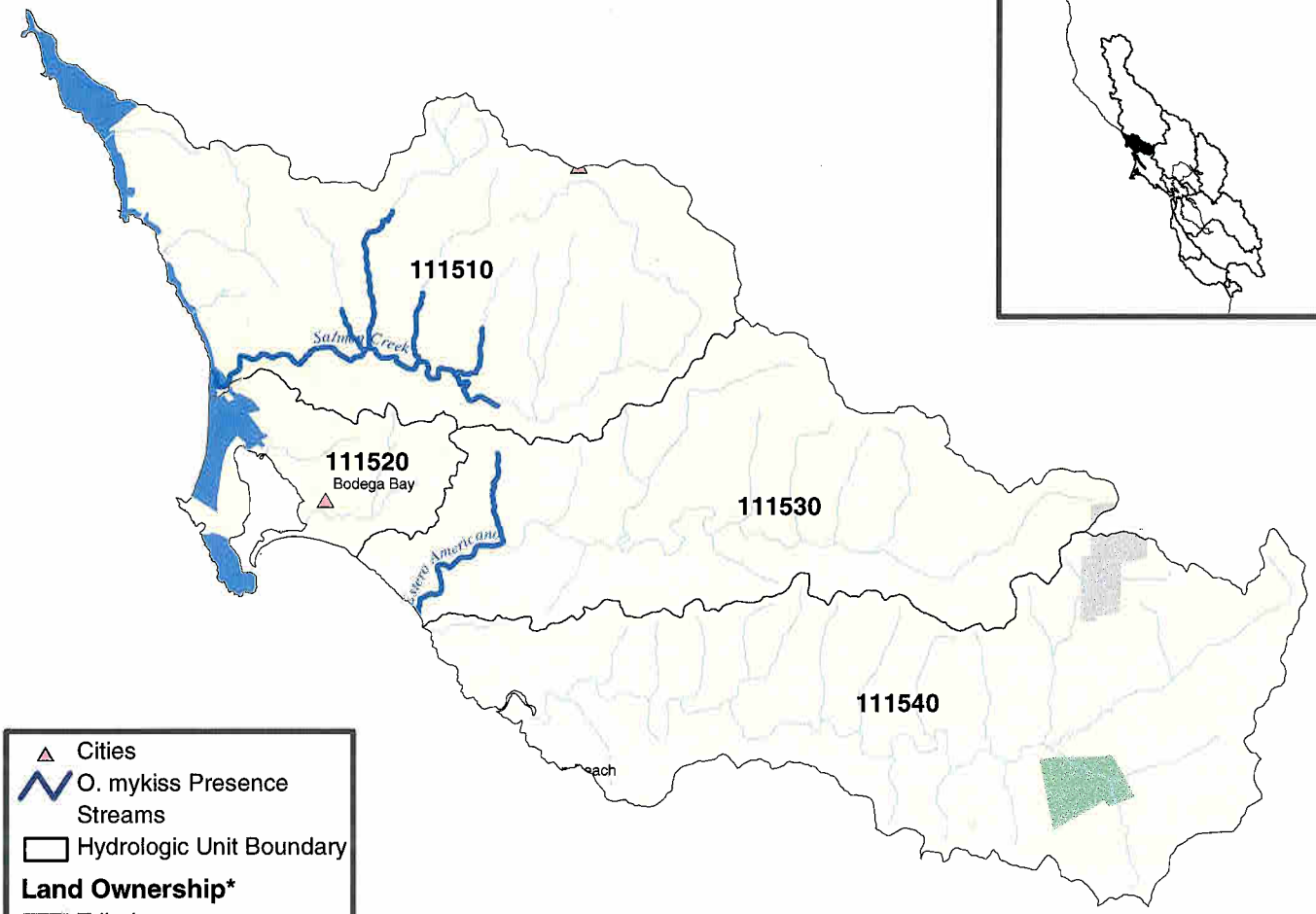
C9 - Unit 2207 (Suisun HU)

C10 - Unit 3304 (Big Basin HU)


DRAFT
Land Ownership
Central California Coast O. mykiss
Russian River HU (1114)
111433
111432
111431
111426
111424
111425
111412
111423
111411
111422
111421
Redwood Valley
Calpella
Ukiah
Hopland
Cloverdale
Geyserville
Lytton
Healdsburg
Windsor
Guerneville
Forestville
Jenner
Graton
Occidental
Sebastopol
Roseland
South Santa Rosa
Santa Rosa
Cotati
Rohnert Park
Central California Coast
O. mykiss
ESU
Cities
O. mykiss Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
0
2.5
5
10
Miles
Note: This map is a DRAFT product for general reference only

DRAFT
Land Ownership
Central California Coast O. mykiss
Bodega HU (1115)





Cities
O. mykiss Presence
Streams
Hydrologic Unit Boundary

Land Ownership*

Tribal
Federal
State/Local
Private/Other
Water

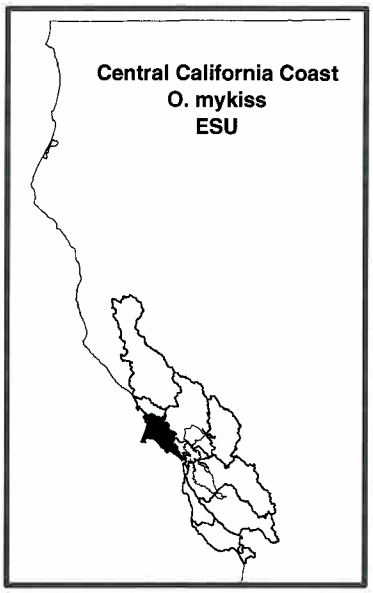
*Source: California Environmental Resources Evaluation System (CERES), 1999

N

0 2.5 5 Miles

Note: This map is a DRAFT product for general reference only

DRAFT
Land Ownership
Central California Coast O. mykiss
Marin Coastal HU (2201)



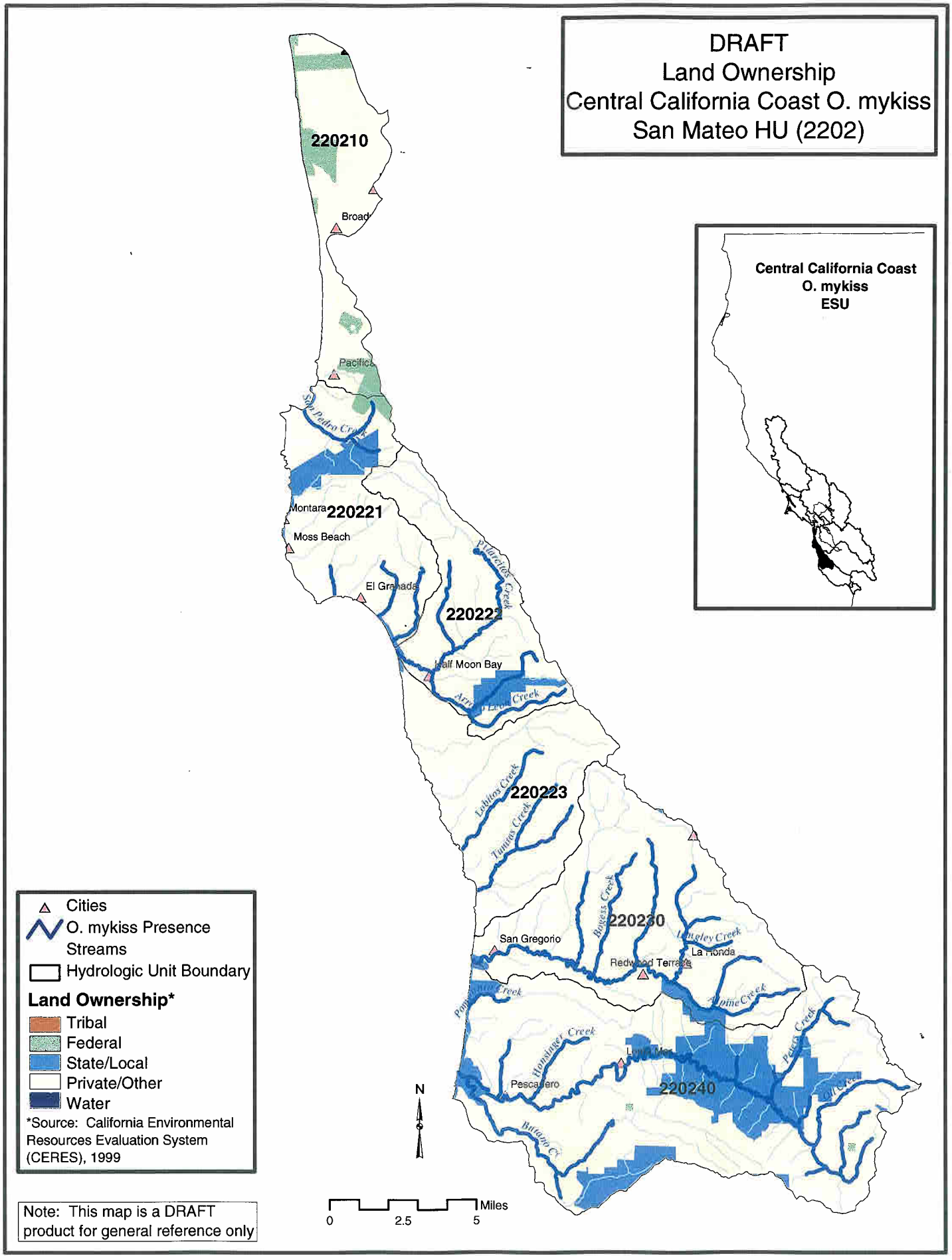
- Cities
- O. mykiss Presence Streams
- Hydrologic Unit Boundary

Land Ownership*

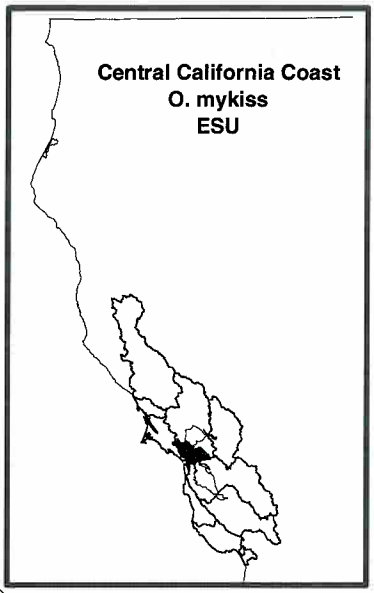
- Tribal
- Federal
- State/Local
- Private/Other
- Water

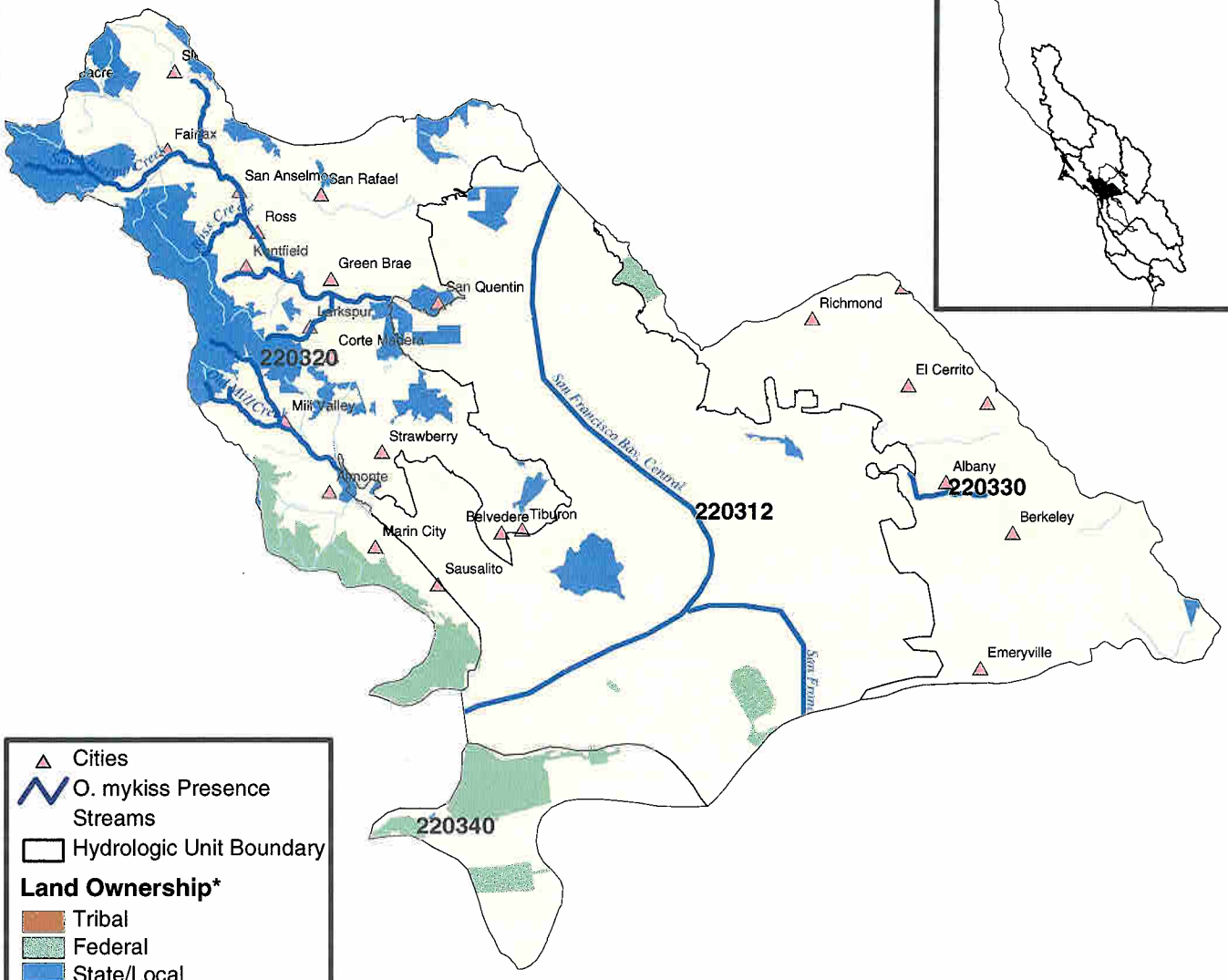
*Source: California Environmental Resources Evaluation System (CERES), 1999

Note: This map is a DRAFT product for general reference only


DRAFT
Land Ownership
Central California Coast O. mykiss
San Mateo HU (2202)
Central California Coast
O. mykiss
ESU
220210
Broad
Pacific
Montara
220221
Moss Beach
El Granada
220222
Half Moon Bay
220223
San Gregorio
220230
Redwood Terrace
La Honda
Pescadero
220240
Cities
O. mykiss Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
0
2.5
5
Miles
Note: This map is a DRAFT product for general reference only

DRAFT
Land Ownership
Central California Coast O. mykiss
Bay Bridges HU (2203)





- Cities
- O. mykiss Presence Streams
- Hydrologic Unit Boundary

Land Ownership*

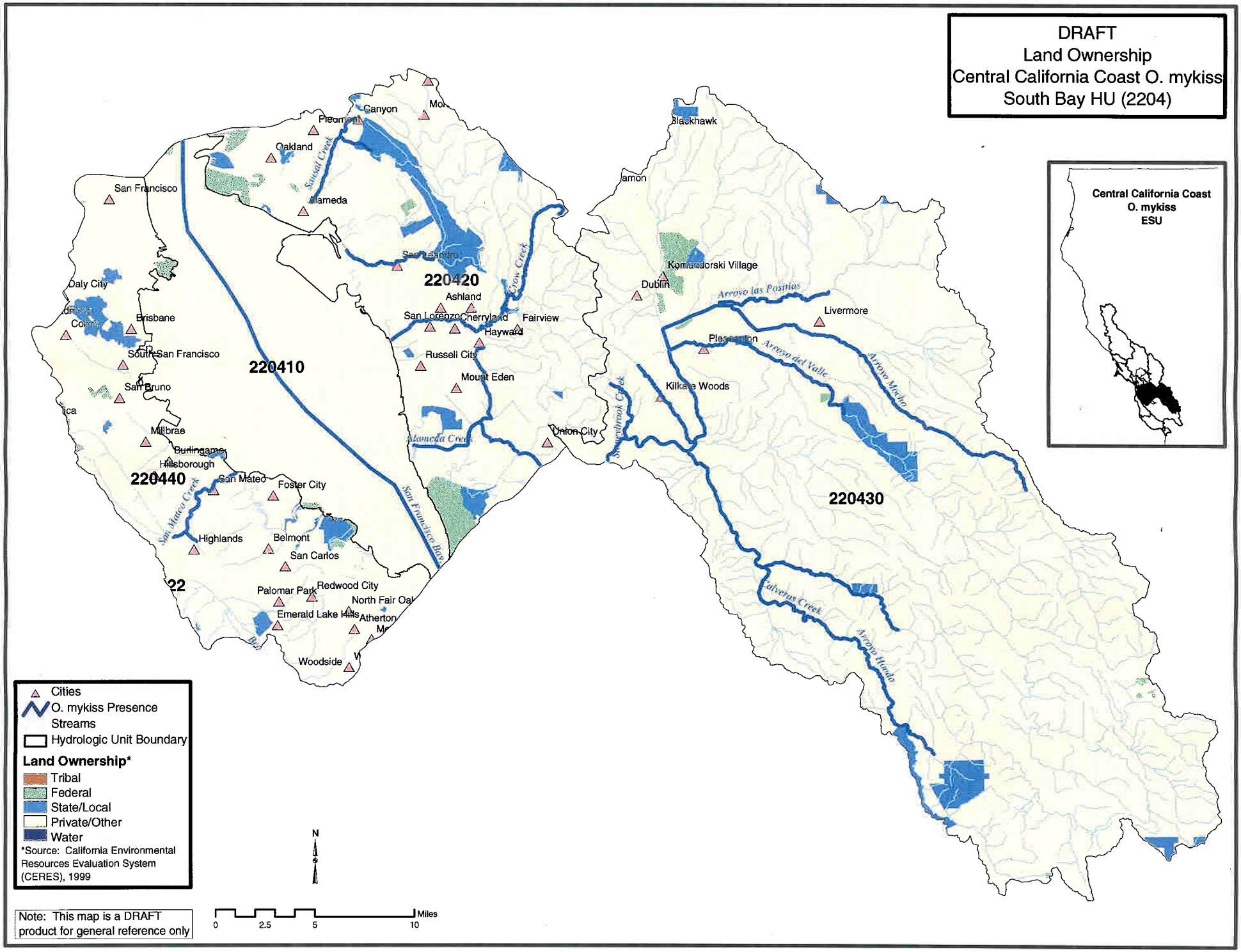
- Tribal
- Federal
- State/Local
- Private/Other
- Water

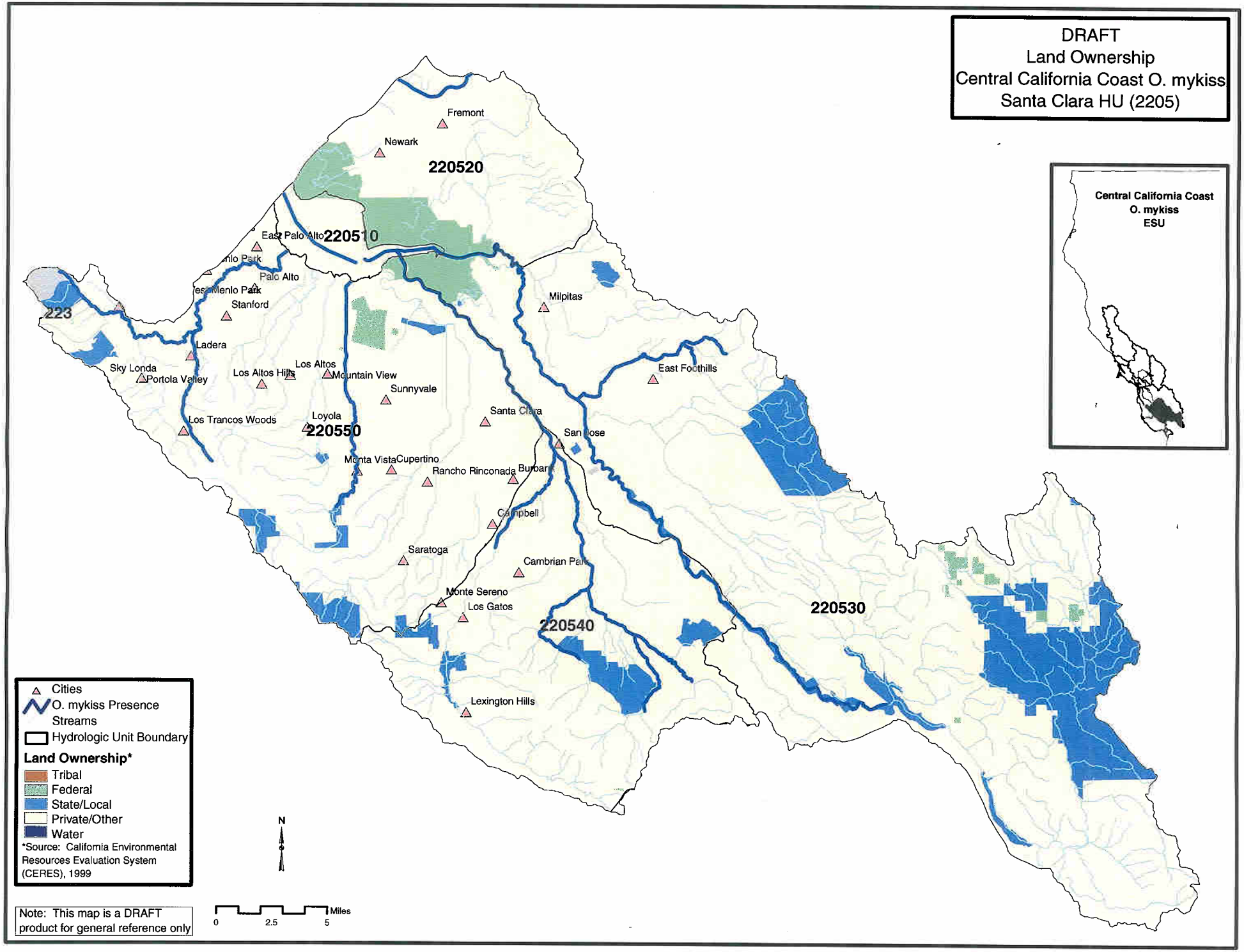
*Source: California Environmental Resources Evaluation System (CERES), 1999

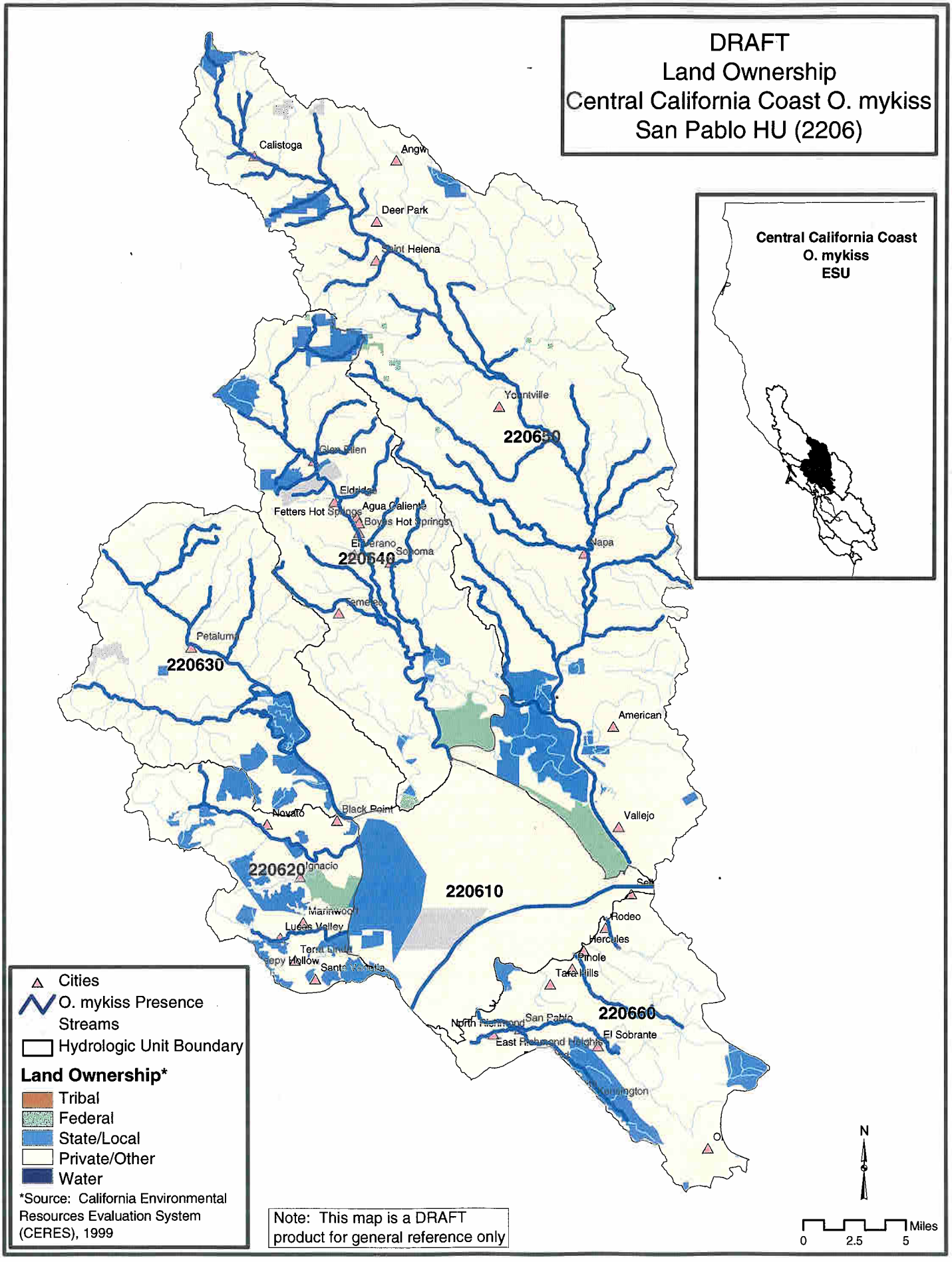
N

0 2.5 Miles

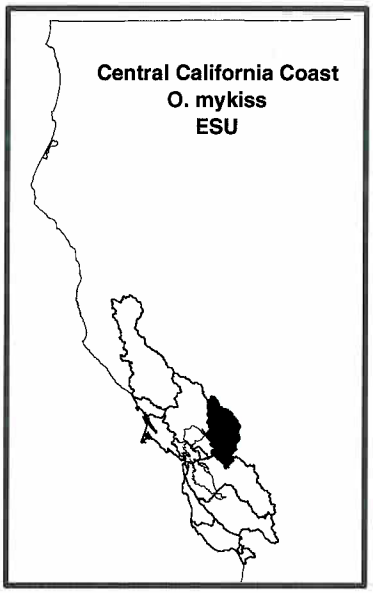
Note: This map is a DRAFT product for general reference only

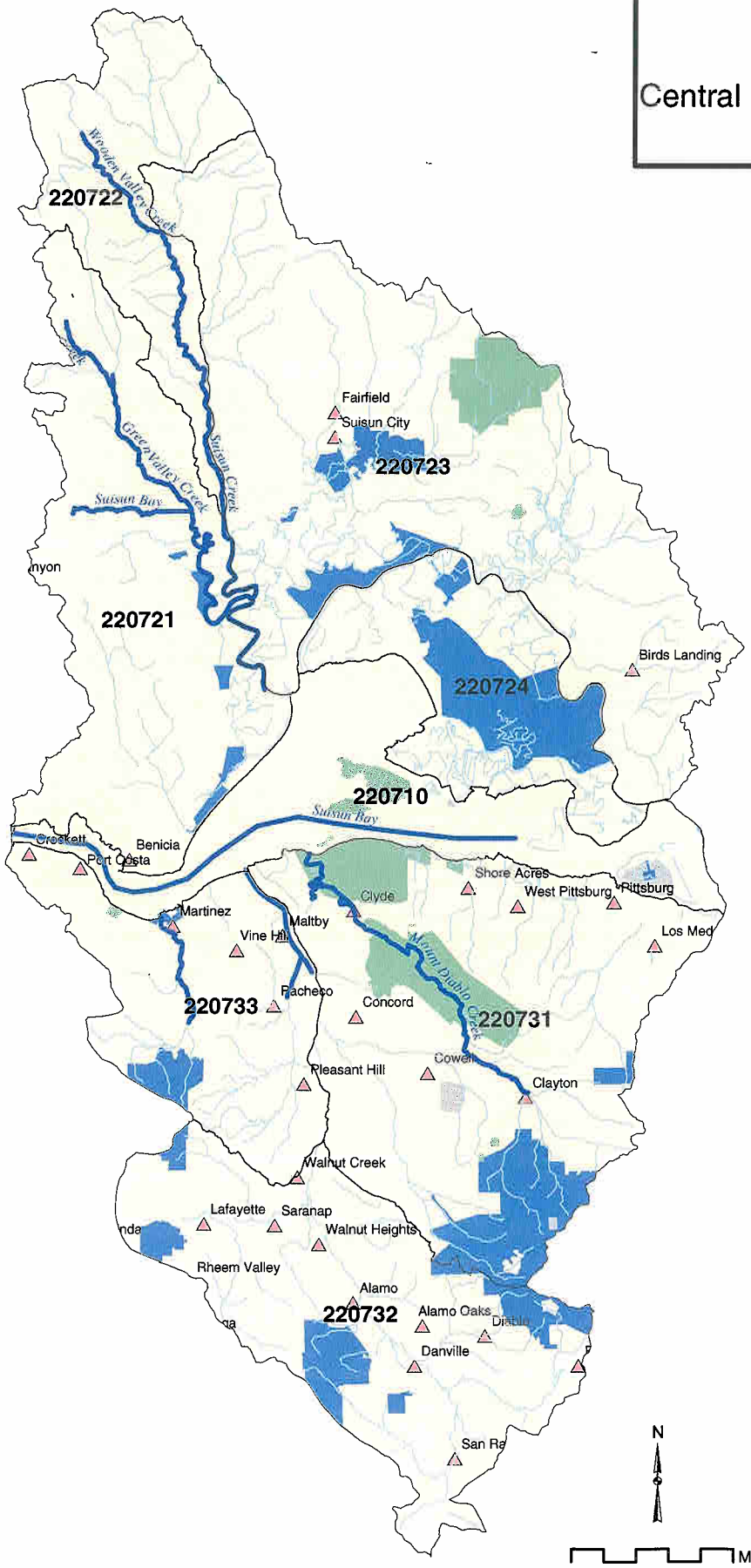

DRAFT
Land Ownership
Central California Coast O. mykiss
South Bay HU (2204)
Central California Coast
O. mykiss
ESU
220410
220420
220430
220440
San Francisco
Daly City
Brisbane
Colma
South San Francisco
San Bruno
Millbrae
Burlingame
Hillsborough
San Mateo
Foster City
Highlands
Belmont
San Carlos
Palomar Park
Redwood City
North Fair Oak
Emerald Lake Hills
Atherton
Woodside
Oakland
Alameda
Canyon
San Leandro
Ashland
San Lorenzo
Cherryland
Fairview
Hayward
Russell City
Mount Eden
Union City
Blackhawk
Dublin
Komandorski Village
Livermore
Pleasanton
Kilkare Woods
Sausal Creek
San Mateo Creek
San Francisco Bay
Alameda Creek
Crow Creek
Arroyo las Positas
Arroyo del Valle
Arroyo Mocho
Calveras Creek
Arroyo Hondo
Cities
O. mykiss Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
0
2.5
5
10
Miles
Note: This map is a DRAFT product for general reference only


DRAFT
Land Ownership
Central California Coast O. mykiss
Santa Clara HU (2205)
Central California Coast
O. mykiss
ESU
220520
220510
220550
220540
220530
223
Fremont
Newark
East Palo Alto
Palo Alto
Menlo Park
Stanford
Ladera
Sky Londa
Portola Valley
Los Altos Hills
Los Altos
Mountain View
Sunnyvale
Loyola
Los Trancos Woods
Santa Clara
San Jose
Monta Vista
Cupertino
Rancho Rinconada
Burbank
Campbell
Saratoga
Cambrian Park
Monte Sereno
Los Gatos
Lexington Hills
Milpitas
East Foothills
Cities
O. mykiss Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
Note: This map is a DRAFT product for general reference only
0
2.5
5
Miles


DRAFT
Land Ownership
Central California Coast O. mykiss
San Pablo HU (2206)
Central California Coast
O. mykiss
ESU
Calistoga
Deer Park
Yountville
220650
Fetters Hot Springs
Agua Caliente
Boyes Hot Springs
Sonoma
220640
Napa
Petaluma
220630
American
Vallejo
Novato
Black Point
220620
220610
Rodeo
Hercules
Tara Hills
San Pablo
220660
El Sobrante
Cities
O. mykiss Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
Note: This map is a DRAFT product for general reference only
N
Miles
0
2.5
5

DRAFT
Land Ownership
Central California Coast O. mykiss
Suisun HU (2207)





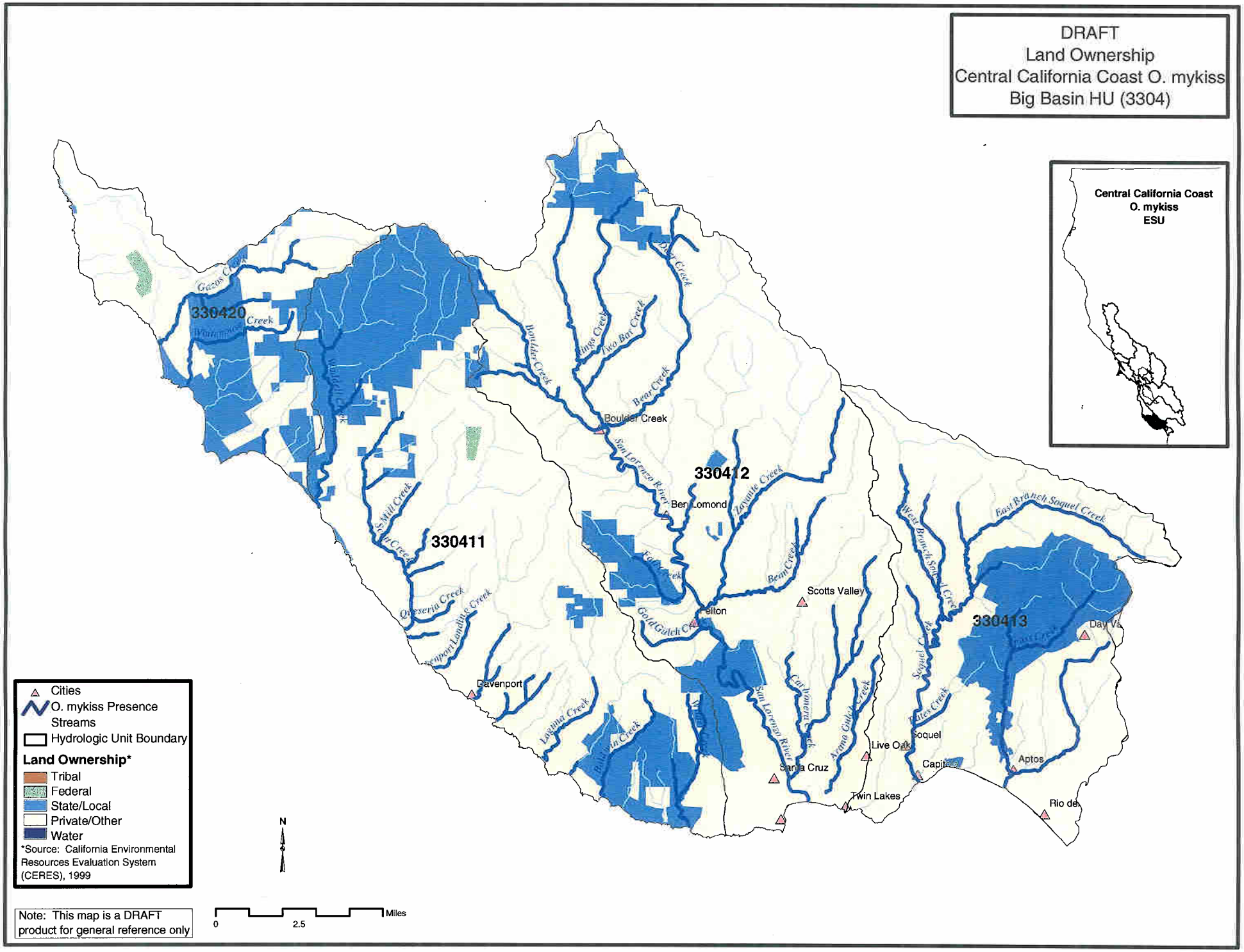
- Cities
- O. mykiss Presence
- Streams
- Hydrologic Unit Boundary

Land Ownership*

- Tribal
- Federal
- State/Local
- Private/Other
- Water

*Source: California Environmental Resources Evaluation System (CERES), 1999

Note: This map is a DRAFT product for general reference only


DRAFT
Land Ownership
Central California Coast O. mykiss
Big Basin HU (3304)
Central California Coast
O. mykiss
ESU
330420
330411
330412
330413
Boulder Creek
Ben Lomond
Scotts Valley
Felton
Davenport
Santa Cruz
Soquel
Live Oak
Capitola
Aptos
Twin Lakes
Rio del
Gazos Creek
Waddell Creek
Bull Creek
Boulder Creek
Kings Creek
Two Bar Creek
Bear Creek
Dairy Creek
San Lorenzo River
Zayante Creek
Beam Creek
Fall Creek
Gold Gulch Creek
Carbonera Creek
Arana Gulch Creek
Soquel Creek
West Branch Soquel Creek
East Branch Soquel Creek
Laguna Creek
Majors Creek
Scott Creek
Mill Creek
Cities
O. mykiss Presence Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
0
2.5
Miles
Note: This map is a DRAFT product for general reference only

Map C11. Preliminary CHART Ratings of Conservation Value for CALWATER HSA Watersheds occupied by the Central California Coast *O. mykiss* ESU

Draft
Central California Coast O. mykiss Watershed Conservation Rating

Map of the fifth- field watersheds occupied by the Central California Coast O. mykiss Evolutionarily Significant Unit (ESU) and eligible for designation as critical habitat.